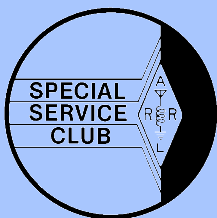




The Raleigh Amateur Radio Society's **EXCITER**

GET INVOLVED

- RARS General Membership meeting: Second Tuesday of the month.
- The RARS net meets every night except Saturday @ 8 p.m. on 146.640.
- The RARS Technical & Trader's net: Saturdays @ 8:00 PM on 146.64.
- RARS meets for a monthly dinner on the First Tuesday of each month.



PUBLIC SERVICE EVENTS

Interested in helping? Visit
<https://www.rars.org/public-service.php>

frequently for our 2021
ham public service
schedule.

RARS General Meeting

Main Topic: NCPACKET

By: Tadd Torborg, KA2DEW

Date: October 12, 2021

Time: Meeting at 7:30 PM, informal
gathering at 7PM on Zoom.

Where: Zoom

RARS Net Monthly Summary

September 2021 RARS nets

493 checkins

925 minutes

Julie Royster KT4JR

RARS net manager

RARS Officers

PRESIDENT

John Honeycutt
N8ZU
919.417.2477
jfh49@bellsouth.net

VICE PRESIDENT

Tom Lewis
N4TL
N4TL2@yahoo.com

SECRETARY

Mark Kilmer
KM4JRH
919.676.0110
mark.kilmer@gmail.com

TREASURER

Greg Seamster
KE4PAX
919.859.0029
KE4PAX@arrl.net



The Raleigh Amateur Radio Society

The Raleigh Amateur Radio Society, Inc. (RARS) was founded in 1969 and continues to serve and support the amateur radio community in the greater Triangle area. In 1999, the society incorporated a new RARS and obtained 501(c)(3) non-profit tax status.

The objectives of the club are to promote worldwide friendship through amateur radio; to be of public service by providing radio communications in times of disaster, emergency, or civic needs; to educate members in radio technique, and to provide training classes to assist in obtaining amateur radio licenses.

Anyone interested in amateur radio is eligible to apply for membership. Dues for regular licensed amateurs are \$18 per year (from July 1 through June 30). Additional immediate family members pay \$5 each per year. Dues for licensed amateurs older than 59 or younger than 16 are \$12 per year. Dues for non-licensed associate members are \$9 per year. Applications for membership may be obtained from the treasurer or on the RARS website.

<https://www.rars.org>

Exciter

The Exciter is the official newsletter of the Raleigh Amateur Radio Society. It appears each month as a PDF on the RARS website at www.rars.org. Members receive email notification when the latest version is available. Please provide your email address to the Treasurer.

The Exciter welcomes articles, advertisements, and other contributions. To submit a piece to the newsletter, please contact the Editor. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's Exciter is the Saturday that is ten days before the general meeting. All submissions must be final. Drafts are not accepted.

The views expressed in the Exciter are those of the individual authors and do not necessarily reflect the views of the Editor or RARS.

Tom Lewis, N4TL, editor (editor@rars.org)

For Your Information

RARS General Meeting

Date: Second Tuesday of each month

Location: ~~Ridge Road Baptist Church 2011
Ridge Road Raleigh, NC, 27607~~

Time: ~~People begin arriving at 7 p.m. The
meeting officially begins at 7:30 p.m.~~

RARS Monthly Dinner

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the CHOW Pizza Bar 8311 Creedmoor Rd, Raleigh, NC. CHOW is behind McDonalds at the intersection of Creedmoor Road and Brennan Drive. We go to the back left in the restaurant. Their private room holds 30-40 and the table layout is flexible. Informal and Dutch, just bring your appetite and best rag to chew.

RARS Repeaters in Raleigh

145.130, 146.640 and 444.525

Join us for the nightly RARS net at 8 p.m. on the 146.640 repeater. All hams holding a Technician class license or higher are invited to check in. We welcome both RARS and non-RARS members to the net.

There is a net Listing on the RARS website click here. <https://www.rars.org/nets.php>

VE Testing

~~The RARS VEs will accept walk-in testing in February, May, August and November at 5:30PM, prior to RARS membership meetings at Ridge Road Baptist Church; the RARSfest in April; the Cary Swapfest in July; the JARS-Fest in November; and following RARS license classes. Please bring a photo ID, your original and a copy of your current license, your \$14 exam fee, and any valid CSCEs that prove passing elements beyond that of your current license. Visit <https://www.rars.org> for more information.~~

September 14, 2021 RARS meeting

The meeting was held on Zoom, as we have been since the covid-19 pandemic started. Many members connected from 7PM on. President John Honeycutt, N8ZU, ran the formal part of the meeting. See the meeting minutes on [page 17](#) for details. After the formal part of the meeting. Tom, N4TL. Introduced Brian Henderson, VE6ZS, who spoke about Wind Turbines.

Wind Turbines by Brian Henderson VE6ZS

Raleigh Amateur Radio Association
September 14, 2021



Brian Henderson VE6ZS

September 14, 2021 RARS meeting

Small Wind Generator



Light bulb and Power



- Incandescent
- 25 Watt
- 40 Watt
- 60 Watt
- 100 Watt



- Fluorescent
- 9 Watt
- 13 Watt
- 18 Watt
- 23 Watt
- 32 Watt



- LED
- 2 Watt
- 4 Watt
- 9 Watt

Two slides from the presentation.

September 14, 2021 RARS meeting

 Tom N4TL Ra...	 Brian VE6ZS Calgary	 Lyn WA4GEH
 Mark out of office (Host)	 Charles St. Onge KM4MBS	 Mike KK4ETS
 Bob K4RLC	 Chuck-K4RGN	 Mike KN4DRN
 Jeremy K2HJX Raleigh	 Dave W4YDY, Greenville, NC	 Murray, K4MHM, Raleigh, NC
 John Honeycutt - N8ZU -	 David Arthur	 Nick (K9RDU) & Nathan (KO4R...
 Chuck, K4HF - Ral	 dennis wz0q	 Rich KR4AS Garner
 Denny KO4IBL	 Dick KD4ISC	 Richard K7RLH Apex
 Alan AB4OZ RALEIGH	 Doug N3LTV Raleigh NC	 Richard, N1FUA, Apex, NC
 Andrew KJ4WRC - Apex	 Greg KE4PAX	 roger k4klk
 Anna F - KO4SHN	 Jerry KE4TTS Cary	 Tadd KA2DEW mobile
 Bob W4GIA	 K4JMZ, Joe Zajac	 Tom - NC4TS, Lake Royale NC
 Bob. N4GEB	 k4lxv	
 Brantley K4CBW	 KE4IHX - Al. Roxboro	

37 people attended the zoom meeting

Future RARS Meeting Topics

Titles, topics, and speakers **subject to change.**

10/12/2021	RARS Officers nominations & NCPACKET, a several-county-wide only-on-ham-radio social network.	Election committee & Tadd Torborg, KA2DEW
11/9/2021	RARS Officers election and Show and Tell	Election committee & members
12/14/2021	RARS Officers induction & Meteor Scatter	Zach Thompson, KM4BLG Asheville, NC

During the Zoom meetings please keep
your microphone muted.
Please edit your name so your
Name, Call and Location are shown.

The next few meeting of RARS will be held using Zoom at 7:30PM. Zoom is a conferencing application that runs on computers, tablets and phones. The meeting ID will be sent out to everyone via email.

Quick start guide for new Zoom users

https://support.zoom.us/hc/en-us/articles/360034967471-Quick-start-guide-for-new-users#h_b0c98dfa-d90f-486d-9617-71ab7b41a273

Zoom help center

<https://support.zoom.us/hc/en-us>

RARS Birthdays

Scott	AB4SL	10/01
Kathryn	KM4RNE	10/01
Jerry	W2GLA	10/02
Dave	K4SAN	10/02
Jay	KM4EP	10/02
Pete	K4PHS	10/02
Dale	W4AUV	10/05
Kathleen	KA2SBC	10/06
Gary	KM4TCT	10/08
Todd	AG4AY	10/08
Rick	KA3PSK	10/09
Andrew	KJ4WRC	10/09
Gale	K4GGB	10/10
Garry	KJ4KM	10/11
Frank	KY4W	10/11
David	WA4DAG	10/14
Jimmy	K4JIC	10/15
David	KO4NTB	10/15
Rob	KO4PEU	10/17
Joe	KO4NWW	10/17
Joey	KE4DRJ	10/21
Gary	K4AAQ	10/22
JC	KK4VUS	10/22
Bob	KN4MRV	10/22
Curt	W4CP	10/23
Donnell	KB2MJP	10/24
Dan Ray		10/24
Bob	NA4G	10/26
Mike	N9MDS	10/26
Lou	W2ROW	10/27
Chuck	K4RGN	10/27
Matthew	KN4VTT	10/28
Stephen	NY4NC	10/28

New Members

Tony Phillips	N4EWE
Pete Varounis	NL7XM

New member, **Pete Varounis, NL7XM**, has an interesting entry in [QRZ.com](https://www.qrz.com).

He is a Radio Amateur Callsign Historian . It looks like he has every callbook that was ever published.

He designed custom callsigns assigned to cast members of Tim Allen's FoxTV's smash hit comedy, "Last Man Standing,". He also placed QCWA materials and its familiar logo to get conspicuous exposure on national primetime television. This link was copied from his QRZ entry.

Ham Nation - "Last Man Standing" - Episode 217, "The Fight" - Behind The Scenes! - YouTube

<https://www.youtube.com/watch?v=2ggKcisR7CU>

RARS Show and tell

Our November meeting will be our "Show and Tell" meeting. If you are going to show something think about how you do that with Zoom. You will need to have enough light on the object so it can be seen clearly. Think about how you will move your camera to the object or put the object in front of the camera. Windows 10 has a camera app that you can practice with. Or start a zoom meeting of one and practice. Alternatively you can send me (N4TL2@yahoo.com) pictures of the object and I can show them during the meeting. A number of people did that last year.

73 Tom N4TL

Ham Radio Dealer/Vendor Status at September 24, 2021

Since the last RARSfest in April, 2019 the status of the following ham radio equipment dealers has been determined:

dBj Electronics, Jamestown, NC: closed

ESRC Tubes, Orlando, FL: closed

AC & DC Electronics Haw River, NC: closed

Eagle 1 Communications, WV: closed

Eagle One Antennas, OH: believed to be closed

The RF Connection, Gaithersburg, MD: in business

KJI Electronics, Cedar Grove, NJ at the Berryville, VA Hamfest, 8/1/21

CT Morgan & Assoc. of Chattanooga, TN is now KM4MPF Sales

The following businesses were present at the Sevierville, TN Hamfest 9/25/21:

Debco Electronics, Ham World, Wireman, Satellite Sam, Gigaparts, KM4MPF Sales and The Signman.

Chuck, K4HF

RARS Monthly Dinner, NEW LOCATION

All members and guests are welcome to the monthly (first Tuesday) RARS Supper, 6:30PM, at the CHOW Restaurant, 8311 Creedmoor Road, Raleigh. The restaurant is at the corner of Brennan Drive and Creedmoor Roads, behind McDonalds. After entering the restaurant, go to the left rear to the private room. Informal and Dutch, just bring your appetite and best rag to chew.

Free AB4OZ Hamfest, Weather permitting

The free AB4OZ HamFest will be Saturday, October 23, 2021. Setup at 9AM. Start time is 10AM. New location, Golden Corral Restaurant rear parking lot. 3551 Grenelle street, Raleigh NC 27603.

Check the latest information here [QRZ.COM](https://www.qrz.com).

Interesting information and items sent to the Exciter.

The 2021 Herb S. Brier Instructor of the Year Award

The Award went to **David Ritter, ND4MR** of North Wilkesboro, NC. ARRL sponsors this award in conjunction with the Lake County Indiana Amateur Radio Club in Brier's memory to recognize superior amateur radio instruction and recruitment. An ARRL Member for nearly 40 years, Ritter is an ARRL Registered Instructor and a full-time faculty member at Wilkes Community College in North Wilkesboro, North Carolina, where he's been the lead -- and sole -- Technician licensing course instructor since 2010. He also is a member of QCWA Piedmont Chapter 126. <https://www.qsl.net/qcwa126/>

Congratulations, Dave, and thank you for all you have done for amateur radio.

73 Chuck K4RGN

KBRW (ARCTIC Radio)

There will be a KBRW (ARCTIC Radio) presentation at the Tarheel Scanner SWL group October 18th meeting. KBRW information page: <https://www.kbrw.org/about/>

You can listen to KBRW using the TuneIn radio app or web page.

Tarheel Scanner SWL group, <https://groups.io/g/TarheelScanner>

73 Kelly Mills

This also came from the Tarheel Scanner SWL group

Arctic Outpost Radio AM1270 spinning the 78s from the 77 latitude.

<https://tunein.com/radio/Arctic-Outpost-Radio-AM1270-s297245/>

QSL from a 44 year old QSO

I worked N3GB on July 17, 1977. It was ten-meter phone contact. Forty four years later, on September 24, 2021, I received a conformation via LoTW. I think that is my longest wait for a confirmation. In 2011 I entered all my paper logs into my logging program and uploaded them to LoTW. N3GB must have done the same.

73 Tom N4TL

QSO Today Virtual Ham Expo Presentations

All of the August 2021 Expo presentations are available on this website.

<https://www.qsotodayhamexpo.com/vod-list-august.html>

The older ones are at the top of that website and are here to.

<https://www.qsotodayhamexpo.com/vod-list.html>

All you need to know about the ICOM IC-7300.

Amateur Radio Club at Kansas State University - ICOM IC-7300 Information GREAT INFO ALL YOU NEED

<https://www.k-state.edu/ksuarc/IC-7300.html>

Thanks to Chuck, K4HF, for sending this to the Exciter

<https://www.rars.org>

RARS Membership links

Use the following link to verify / update your membership profile.

<https://www.rars.org/userprofile.php>

Use the following link to renew your membership.

https://www.rars.org/membership_renewal.php

HAM RADIO LUNCHEON

Everyone is welcome!

Every Thursday at 11:30 am

New York Diner, 909 McKnight Drive Knightdale.

Check the latest information on the AB40Z QRZ entry.

QRZ.COM.

Hamfest Calendar

For details go to <http://www.arrl.org/hamfests/search>

Maysville, NC Hamfest, Oct. 10, **Canceled**

Forsyth Amateur Radio club, Winston Salem Swapfest Oct 16

Asheville Radio Museum Swapfest & Tours Oct 23

AB40Z Hamfest NC Oct 23

Benson, NC - Nov 21

Upcoming Events

OCT 15—17	Jamboree on the Air Join other Scouts on the air. More info at https://www.scouting.org/international/jota-joti/jota/.
Oct 18—22	ARRL School Club Roundup Contest Open to individuals, clubs, and school groups. More info at http://www.arrl.org/school-club-roundup.

PSE Send Us Photos!

Please send photos (with a caption) of youth "playing radio" to Brantley K4CBW (k4cbw@arrl.net) for inclusion in the Exciter. Whether operating, building, or otherwise assisting, we'd love to see youth in action!

Technician License Question

Here's a question that could appear on a Technician license exam.

When is it permissible to transmit messages encoded to hide their meaning?

- A. Only during contests
- B. Only when operating mobile
- C. Only when transmitting control commands to space stations or radio control craft
- D. Only when frequencies above 1280 MHz are used

Find more questions at: https://hamexam.org/flash_cards/15-Technician

General License Question

Here's a question that could appear on a General license exam.

Which of the following transmissions is permitted?

- A. Unidentified transmissions for test purposes only
- B. Retransmission of other amateur station signals by any amateur station
- C. Occasional retransmission of weather and propagation forecast information from U.S. government stations
- D. Coded messages of any kind, if not intended to facilitate a criminal act

Find more questions at: <https://hamexam.org/exam/16-General>

Technician Answer: C.
General Answer: C.

RARS Classifieds

Copied from <https://www.rars.org/classifieds.php>

The items below were listed within the last 30 days on the RARS website.

Check the RARS Classified List on the RARS website regularly for new items.

Belka-DSP 1.5-30Mhz Shortwave Receiver - \$120 OBO

Posted October 2nd, 2021 by: KA9QJT

Contact: ka9qjt@hotmail.com

The Belka-DSP is designed and built in Bulgaria and is a very small DSP-based receiver with LCD display, rotary encoder for tuning, volume and menu selection. It's in a metal enclosure with a BNC antenna connector, built-in battery (charged via MicroUSB port) and a 3.5mm stereo audio output port.

Use with stereo headphones or plug into a small powered speaker with a stereo patch cable. (Audio output is at headphone levels only)

There's more info and a review here:

<https://swling.com/blog/2020/02/dans-initial-review-of-the-belka-dsp-portable-shortwave-radio/>

Included:

Belk-DSP radio

Telescopic whip antenna

Printed manual (I can also provide the .pdf by email as well)

The radio and antenna are in excellent condition. Lightly used and only indoors.

Email, text or call Brian - KA9QJT

919-609-4664

RARS Classifieds continued

FS: Antique Radio Gazette FREE FOR POSTAGE

Posted October 1st, 2021 by: W4BOH

Contact: infomet@embarqmail.com

Journal of the Antique Radio Club of America. Fun read and they are worth the postage! I bought them on here a while back and enjoyed them, but now it's time for downsizing. I have 1982-1992 plus Summer 1994.

Best contact is infomet@embarqmail.com

Wilson

Yaesu FT 857 160 thru 440 MHz 100 Watt Transceiver (mounted in a Go Kit Case)

Posted September 23rd, 2021 by: K4HF

Contact: k4hf@arrl.net

The FT 857 is the radio, along with the MFJ 4125 power supply that are mounted in an aluminum travel case to make an ideal Go Kit. The FT 857 Control head is mounted on a board, along with a speaker and dig voltmeter to operate next to the case. Manual, mike and cables are included. Very good condition - \$595.

Contact me by e mail, preferred, or (919) 872-6555. Thanks, Chuck

Kenwood TS - 480SAT 160 thru 6 Meter SSB/CW/AM/FM/FSK 100 Watt Transceiver

Posted September 23rd, 2021 by: K4HF

Contact: k4hf@arrl.net

This transceiver is new and unused in the original box. All that comes with it is included. With internal antenna tuner, Nifty Manual, MT-480 Mobile mount, RT Systems programmable software and superior noise reduction. \$595.

Contact me by e mail, preferred, or (919)872-6555 Thanks, Chuck

RARS Classifieds continued

Two free callbooks

Posted September 20th, 2021 by: N4TL

Contact: n4tl2@yahoo.com

Radio Amateur Call Book Magazine, spring 1959 US and Foreign calls. It sold for \$5.25. in 1959. Radio Amateur Call book Magazine, 1976 US calls, Includes Repeater Stations NEW! Sold for \$12.95.

Contact N4TL Via email. 73 Tom

Kenwood TS-820 160 thru 10 Meter SSB/CW 100 Watt Transceiver

Posted September 17th, 2021 by: K4HF

Contact: k4hf@arrl.net

The TS-820 (not TS-820S) has a built in power supply and comes with the matching VFO-820 remote VFO and the matching MC-50 Base mike. Tested and in very good condition. \$195 or \$230 including an additional new set of three tubes for the RF output section.

Contact me by E Mail, preferably, or (919) 872-6555 - Thanks, Chuck

For Sale KX3/PX3 and FT 817nd

Posted September 16th, 2021 by: K4DME

Contact: Dme261@gmail.com

KX3 with KX3RET, KXAT3, KXFL3, KXBC3, PX3., \$1600.00

FT 817 with Collins XF115C filter, \$550.00

Dave K4DME 209-840-2101

selling a few things

Posted September 14th, 2021

Contact: garysch69@gmail.com

Ten-Tec Omni-D, CS-750 DMR HT, Ten-Tec Omni-D for \$175.

Contact Gary K3OS.

RARS Classifieds continued

FOR SALE or TRADE

Posted September 9th, 2021 by: WB4UFO

Contact: gfrski1948@yahoo.com

KENWOOD TS-820S,VFO-820,SP-820.AT-200 missing vfo cable all are exc condition and work well package deal 350.

KENWOOD TWINS BRONZE FACED R599D,T599D W/MATCHING SPK. all works well exc cond. the rx. has the 2m and 6m converters installed recapped 425.

RANGER RCI-5054DX 6M MULTIMODE NEVER MOBILE EXC WORKING AND COND. 175.

HEATHKIT HR-1680 HF RX EXC COND AND WORKING 100.

EMAIL ME OR CALL 919-665-0833 TNX JOHN WB4UFO

Raleigh, NC no charge amateur radio exam

Posted September 8th, 2021 by: N4MQU

Contact: MarkGibson6822@gmail.com

I promote our amateur radio exams to non ham websites. I have been saying it is a fun family activity. At our exam session Saturday, we hit the jackpot! Two families past their exam a father son team from Wendell and one of our VE's had his daughter, brother and nephew past the exam. (No he did not help at that session due to nepotism rules). Our next testing session is on Thursday September 16 at 10:00 AM. Can't make that we can do exams by appointment. Please register at <http://www.fivecountyhre.org/study-tips-and-registration/>. There is no charge for the exam.

RARS Classifieds continued

Misc Ham Radio Gear

Posted September 6th, 2021 by: K4HF

Contact: k4hf@arrl.net

1. Kenwood TH-77A 2 Mtr/440 5 Watt Handheld. Comes with a good battery, drop-in charger and speaker mike. very good condition - \$110
2. Diamond Model GZV4000 power supply, 5V TO 15 VDC AT 40 Amps continuous with built in speaker. As new condition - \$115
3. item 3 Sold
4. Bag of 14 New PL-259 Coax Connectors - \$15
5. Astron RS35M Power Supply, 13.8 VDC, 35/25 Amps excel- \$115
6. Heathkit HG-10B VFO for the DX-60 series transmitters, very good condition - \$60
7. Kenwood TM-261 2 Meter 50 Watt Mobile, works, needs mike - \$60

Contact me by e mail, preferably, or (919) 872-6555. Thanks, Chuck

Kenwood TS-520 100 Watt 80 - 10 Meter Transceiver

Posted September 6th, 2021 by: K4HF

Contact: k4hf@arrl.net

The TS-520 comes with a built in power supply, ssb and cw filters, base mike and manual. Tested and fully operational. In very good condition. \$225.

Contact me by e mail or (919) 872-6555. Thanks, Chuck

RARS Membership Meeting Minutes – September 14, 2021

7 PM via Zoom

Call to Order:

Pledge of Allegiance recited.

2 new members.

A quorum was not present.

Officer Reports:

- President's Report Next BoD meeting will be next Tuesday; also on Zoom. Contact John to get on the agenda.
- RARSfest has been canceled for the upcoming year.
- VP Report Next month's presentation will be NC Packet by Tadd Torborg. KA2DEW.
- The Secretary No report.
- The Treasurer Presented information on the membership numbers. Indicated that the club is in good shape financially.
- Repeater Chair No report.
- Exciter Editor No report.
- Net Manager No report.
- The Public Service Director Noted upcoming events, and requested volunteers for each event. Volunteers can sign up for our events on the RARS web page.
- Field Day Chair No report.
- ARRL Liaison No report.
- Youth Director Brantley reported the upcoming Scouting Jamboree on the Air and ARRL School Club Roundup coming in October.
- At large director Alan noted upcoming hamfests.
- At large director No Report

Action Items

- Brantley West to send out link to the Jamboree.
- Nick Atkins, K9RDU will contact Brantley to discuss implement a "kid's" net.

RARS Membership Meeting Minutes – September 14, 2021

Program

Tom Lewis introduced tonight's speaker, Brian Henderson, VE6ZS, who will present the subject of "Wind Turbines".

Additional Comments

Dave Langley, W4YDY announced that the Maysville Hamfest is back on..

The meeting adorned at 9:13 PM Eastern Time.

Respectfully Submitted,

Mark Kilmer

RARS Secretary

[Jump back to page 3](#)



RARS Board Meeting Minutes

17 August 2021 - 7 PM via Zoom

In attendance:

John N8ZU, Tom N4TL, Joe WA4GIR, Alan AB4OZ, Curt W4CP, Tadd KA2DEW, Julie KT4JR, Carl W8WZ, Hank K4HM, Chuck K4HF, Charles KM4AMT, Brantley K4CBW

Call to Order:

A quorum was present when N8ZU called us to order at 7 PM

Old Business:

No Old Business

New Business:

1. Meeting in Person. It was agreed that we will not pursue meeting in person for our monthly RARS meetings again at this time but will continue to meet via zoom.
2. Resumption of VE Testing. We will not resume VE testing at this time as we see no pressing need at this time as there are other opportunities for VE testing in the area. A decision about the NOV session that is scheduled then will be made in OCT.
3. RARS Fest. It is difficult to think about doing a hamfest in 2022 because of the health condition and the availability of volunteer leadership. We will hope we can do it in 2023. If we are going to do it in 2023 we need to recruit new volunteers now and train them to be ready for 2023. It was asked that Greg prepare a financial projection for the club assuming we have no hamfest income. A motion was made by Chuck K4HF and seconded by Tom N4TL that we do not have RARS fest in 2022. Partly because of the uncertainty of the COVID 19 situation and partly because we need to rebuild our volunteer base to run the hamfest. The motion carried as it was passed by majority vote. It was felt by the board that it is important to rebuild the volunteer posi-

RARS Board Meeting Minutes, continued

tions to lead RARS fest, including a RARSfest chair as soon as possible. John N8ZU will write about this need in the Exciter. Hank will put that we are not having a hamfest in 2022 on the webpage. N4TL will also put this information in the Exciter. Chuck K4HF will discuss the situation with the Fair Grounds staff and see if we can carry over our date to 2023 or get our deposit back. The preference is to leave our deposit with them and confirm the date for 2023 if they will let us go that route. Chuck will report on this next month to the board.

4. 2022 RARS Nominating Committee. John N8ZU appointed Chuck K4HF as the nominating committee chair and Chuck agreed to serve. Chuck asked the following people to be on the committee with him, Alan AB4OZ and Carl W8WZ. President and Secretary are the officer positions that need to be fulfilled.
5. The Board noted the sad news of the death of Jeff AC4ZO and Carl W8WZ will become trustee for the N4RAL callsign now that Jeff has died.

Officer Reports:

VP Report - Next month's presentation will be about wind turbine solar power by VE6ZS. Tom is working on confirming this.

The Secretary was absent so no report was given.

The Treasurer was absent so no report was given.

The Public Service director was absent so no report was given.

The Education Director was present and had no report

The Field Day Chair Curt W4CP has submitted our score. We will see how we did in the December QST. Curt says he thinks we did better than the last time we had Field Day. Tom N4TL returned the QSL request for a Field Day contact that came to him as W4DW trustee.

Repeater Chair report was given by AB4OZ. The building will be cleaned with bleach to clean mold off of it. Alan AB4OZ and Chuck W3WZN have been maintaining the repeater locations. They need help carrying some power supplies, anyone who can help with that should

RARS Board Meeting Minutes, continued

contact AB4OZ.

RARSfest chair is vacant so no report.

Exciter Editor Tom N4TL reported that all is going well

Food Service Director Richard N1FUA was present with no report

Net Manager Julie KT4JR reported that our nets are going well and agreed to serve another term as Net Manager

ARRL Liaison Chuck K4HF Reported that our Section Manager Marv WA4NC is running for Director of the Roanoke Division. The current director Bud W2RU will also run so it will be a contested election. Vice Director Bill N2COP is going to run for re election and it seems he will be unopposed. ARRL HQ sent out a bulletin saying there will be no fees for ham radio licenses until next year.

NCQP Chair not present no report

VE Team Leader Joe WA4GIR reported that there was a request of his team to get credentialed with the Laurel VEC and he did that.

Webmaster Hank K4HM Reported that he has made changes to the RARS L list that were discussed last month. Now our members, and only our members, are on that list. Hank also changed the program title on the webpage to be accurate for the upcoming program and updated the webpage section about the RARS dinner so it is all up to date now.

Youth Director Brantley K4CBW reported that kids are going back to school now and the last youth day didn't get as much participation as January did. He hopes the next January event will be popular.

At large director AB4OZ had no further report

At large director Tadd KA2DEW had no report

At large Director Ken AD4GX had no report

There being no further business a motion to adjourn was made by Tom N4TL. It was passed and the board adjourned at 8:08 PM Eastern Time.

Respectfully Submitted,

Carl W8WZ

Substitute Secretary.

High Power Tubes and Transistors



3-500Z Tube

Used in many linear amplifiers.

They have a plate dissipation of 500 watts .

One tube costs \$279.95 at DX Engineering.



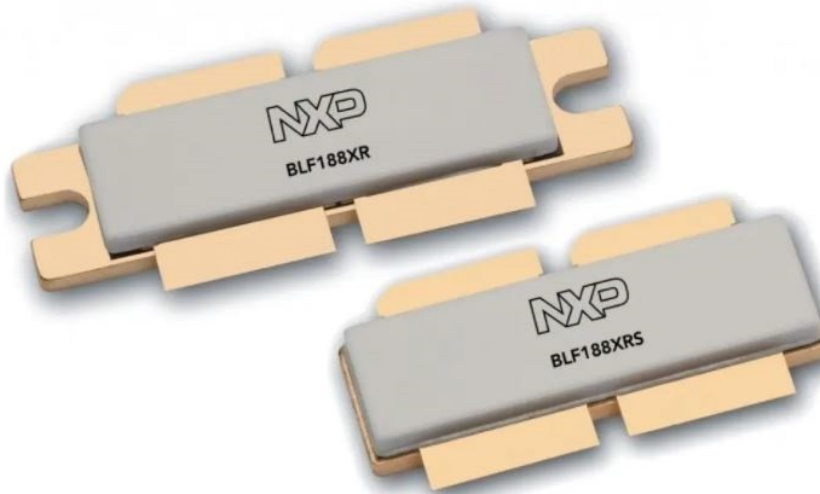
A Svetlana 4CX800A (GU74B)

high-performance ceramic/metal

tetrode with plate dissipation of 800 watts

One tube costs \$349.95 at DX Engineering.

High power transistors are replacing these tubes in new sold state amps. Here is a picture of the transistors used in an Elecraft KPA1500 amplifier. Two are used in the 1500 watt amp.



Power LDMOS Transistors, BLF188XR and [BLF188XRS](#)

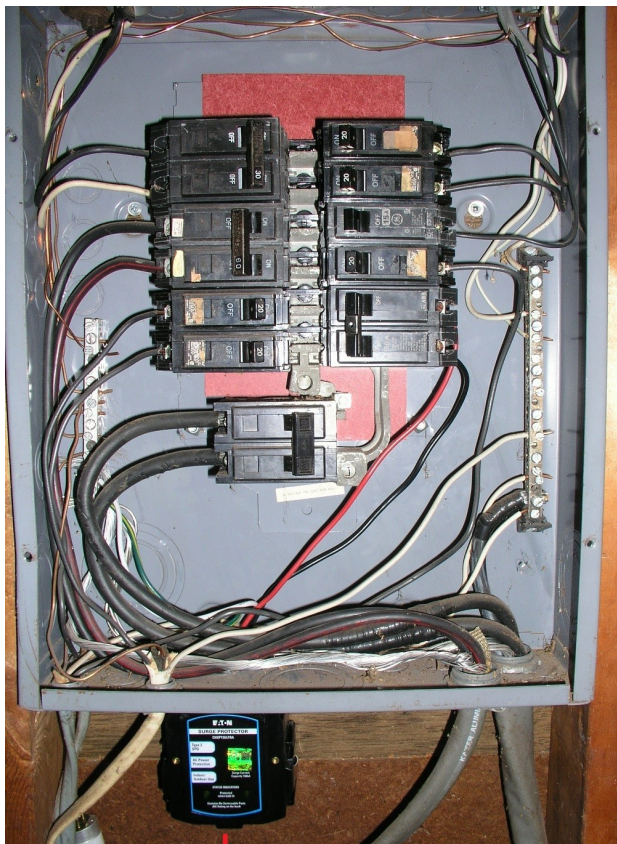
1400 W extremely rugged LDMOS power transistor for broadcast and industrial applications in the HF to 600 MHz band. They are listed at Digikey for \$187.50 each.

73 Tom, N4TL

240 Volt AC Line Surge Protection

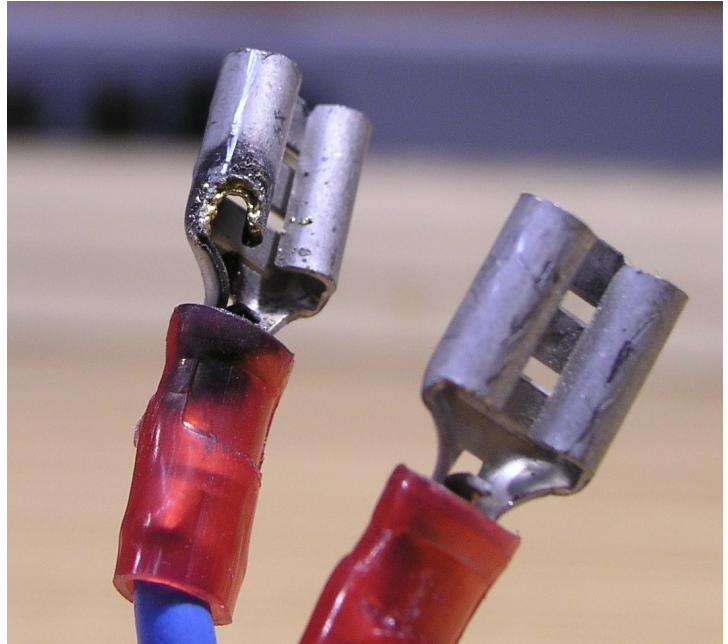
Tom N4TL

I recently checked linear amplifier for a friend. The power transformer was damaged as well as many parts on the main power circuit board. When I removed the main power circuit board, I noticed that an arc damaged the AC input connector. I believe a surge came in the 240 Volt AC line and arced from the input to the output of the AC switch.



Eaton Surge Protector

AC Power panel with Surge Protector attached to the bottom.



Damaged Connector

After seeing this, I decided to add a whole house surge protector to my house. The one I used is an [Eaton CHSPT2ULTRA](#) Surge Protector. A fifty-amp circuit breaker is needed for it. The power panel in my workshop has room for it. You can see the red and black wires go to the new 50-amp breaker.

An electrician told me room can be added to a panel by using tandem circuit breakers. Check it out at this [URL](#).

It is best to have an electrician install surge protectors and do the work in the power panel

FT8 Experiences - Patience, Wait your Turn

By Denny Oestreich, KO4IBL

This is a short article of my HAM radio experience and configuration with Digital FT8. I share this to let you know what worked for me to set up and work FT8. I have achieved WAS on 20 M and 40M and DXCC in two months. I will describe my FT8 learning process, my radio, my antennas, the software applications, and the logging process. To date I have Worked all States (WAS) on mixed modes and then WAS on 20M and WAS on 40 meters FT8 Digital. I am currently working to get DXCC on FT8 with 85 of 100 Countries logged. I am a beginner, but I am learning something new every day. I hope this short article will encourage someone else to get started or remember what they went through.

From the fall of 2020 thru March of 2021, I hit the books and tested for my Technician, General and Extra Ham Licenses. During this time, I started making HAM radio contacts by joining the RARS Nets with 2M Baofung and Yaesu radios. This helped me to understand the etiquette and protocol and get over the microphone shyness. Then I followed the advice of my Elmers, bought an HF radio and antenna and started making HF contacts. I soon determined that to make more worldwide contacts without an amplifier I could use FT8. FT8 is widely used around the world, and you can find users in every country. Many of you already know about FT8, but this is what I learned.

There are many HF radios to choose from and they all have some of great capabilities. I purchased a ICOM 7300 on the advice of several of my Elmers. It turns out to be a great radio for me. This radio has a good user manual to get you started, but you must read to understand the manual, it's not always intuitive... The ICOM 7300 is quite common among other HAMs. Learning to use the radio is helped by many YouTube videos. The best ICOM 7300 YouTube videos I have found are by WA2IVD. He has 46 15-20 minute videos going thru the ICOM 7300 manual and demonstrating on a Radio for each section. His videos are titled "ICOM 7300 From A to Z". His YouTube Index site is at:

<https://www.youtube.com/watch?v=m48WLp76ue0&list=PL48JZWhCJoH3bGOyfmZVxgRHFqs2VUG8P&index=1>

Learning about antennas was a challenge. I read about Antenna Design in the ARRL License Manuals and that helped me to pass the license tests. However, personal experience and advice from my Elmers really made the difference. For an HF antenna I tried building my own 10M and 20M dipoles for the attic. They did not work well. The 20M dipole worked somewhat better outside between my chimney and a tree at about 35 feet. I again took the advice of my Elmers and purchased a long wire antenna. The antenna is a "My Antenna multiband EFHW 7510". The antenna is located between my chimney and a tree limb 60 feet away at 60 feet high. The antenna then makes a 60 degree right turn and goes to another tree at about 50 feet. I am restricted by my ½ acre lot size. The Antenna seems to work very well. To get started I recommend purchasing an antenna with a design that has been worked out for you and gets you on the air quickly.

FT8 Experiences - Patience, Wait your Turn, continued

The FT8 process is a computer application, WSJTX, written by a Princeton Professor and associates. The When the application is running you begin a QSO by selecting a Call Sign that has posted a CQ or by posting your own CQ. FT8 digital mode is based on six short digital messages, with no rag chew. Here are the messages

Message purpose	Message format.
1. My response to a CQ message with my Grid location	K7CAR KO4IBL FM05
2. A received response with my signal report:	KO4IBL K7CAR -08
3. A signal report reply to the received response:	K7CAR KO4IBL R-07
4. A message to indicate signal report received	KO4IBL K7CAR RRR
5. A 73 thank received end the contact	K7CAR KO4IBL 73
A CQ message is selected if you want to start a QSO.	CQ KO4IBL FM05

WSJTX does all the configuration of the radio for transmit and receive at 15 second intervals. It displays the messages being sent and received. It also has a spectrum screen for the shared FT8 frequency used with the 50 Hz time slots used for the multiple transmit and receive digital messages.

Configuring WSJTX is probably the most difficult task to establish an FT8 instance on your computer. The Application can be downloaded from the Princeton Website at: <https://physics.princeton.edu/pulsar/k1jt/wsjsx.html> . Be sure to get a copy of the user's manual from the same site. To connect your computer to your radio you will need USB cable with proper RF shielding. Amazon is a good source. The software configuration is somewhat specific to your radio. There are several examples in the user manual and online. If you follow the examples and make needed adjustments for your radio, you should be OK. The most difficult to understand will be the PC COM channels. Be patient and read the manual, it will get you thru.

To assist in viewing the available contacts I am using the Gridtracker application. Gridtracker interfaces with WSJTX and allows you to view and select a contact, communicates to WSJTX which in turn communicates to your radio. The display allows you to select a new contact posting a CQ or a contact that is having a QSO with another contact. You can follow the contact in QSO until they have completed their QSO and then send a connect message to them to attempt your own contact (tailgating). On good band conditions Gridtracker may display over 50 potential contacts for you. The download for Gridtracker is at: <https://gridtracker.org/downloads/>.

A very important component for FT8 is a good logging application for your PC. I am using N3FJP. It is quite simple to use and interfaces well with LoTW. The download for N3FJP is <https://www.n3fjp.com/aclog.html> . This log system is free for a few weeks, then costs a little to continue using it. I recommend it, but I have not used other Logging systems to compare.

FT8 Experiences - Patience, Wait your Turn, continued

If you want to record your contacts for awards you will need to set up a Logbook of the World (LoTW) account with ARRL. You should upload your contacts at least daily. Nothing is more frustrating than making a difficult contact only to have the other person not log it for confirmation for several days. In chasing awards, you may find yourself checking LoTW every day.

Some other things I have learned about FT8.

1. Some contacts do not use LoTW. Gridtracker allows you to not display them.
2. I enjoy looking up each successful contact on QRZ. They have amazing shack and hobbies.
3. 20M has more US contacts for WAS. 17M has more DXCC contacts.
4. If you leave the volume up a bit on your radio you can tell which bands are busy.
5. There are FT8 frequencies on 9 different bands.
6. You may have to try sending 3-5 times to get some contacts to reply.
7. When a difficult country appears in Gridtracker with 3 contacts, try them all. One may log.
8. I still don't understand why some contacts use RR73 instead of RRR and then 73.
9. Learn to watch the Spectrum to see if someone using your time slot.
10. Delaware and West Virginia were the most difficult states to make WAS FT8 contacts.
11. I did not have to get a time sync application. WIN-10 works fine.

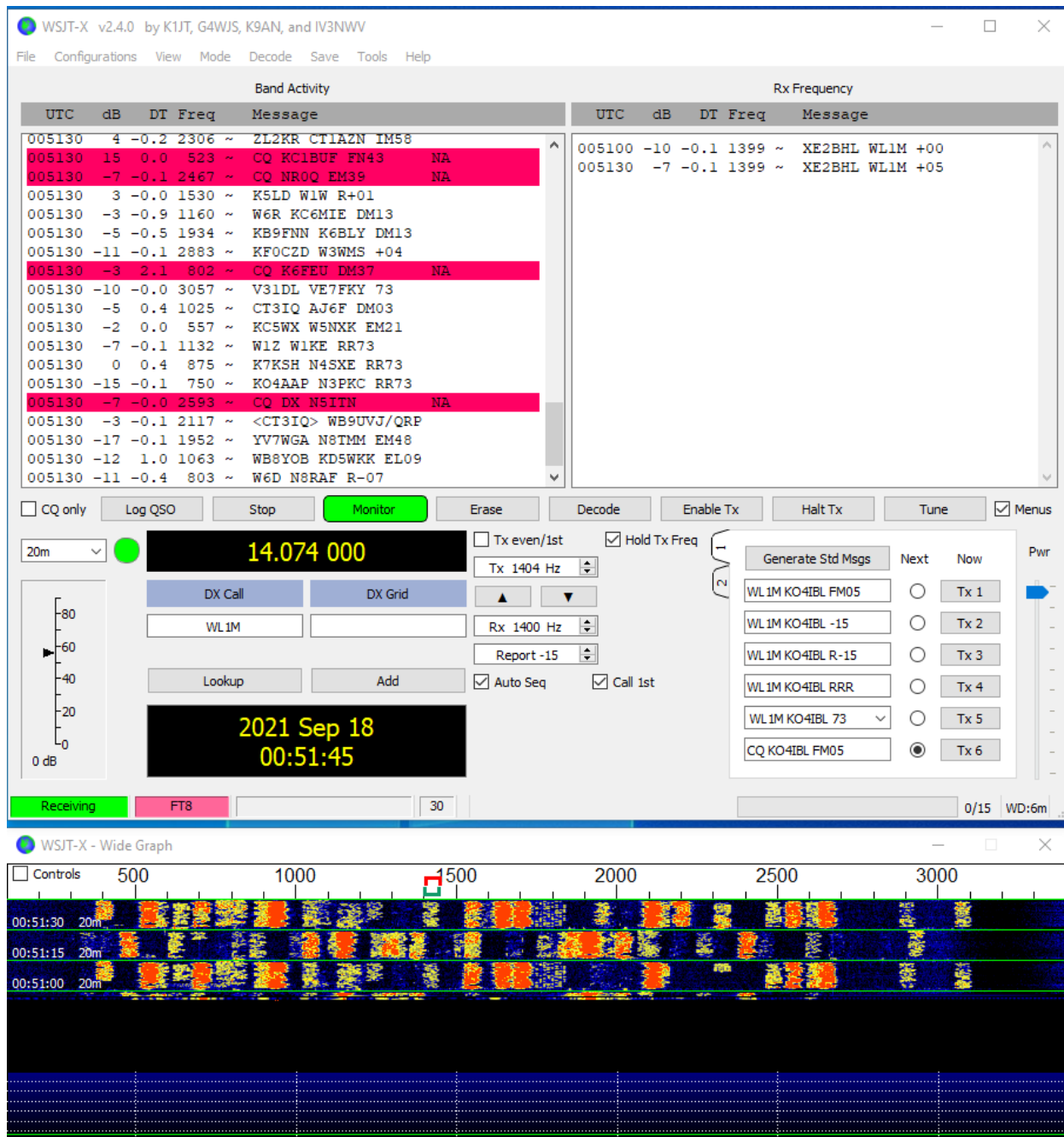
If you would like to discuss or make suggestions on what I have done please contact me.

KO4IBL Denny

Continues on the next two pages.

FT8 Experiences - Patience, Wait your Turn, continued

My WSJT-X Application Screen



FT8 Experiences - Patience, Wait your Turn, continued

My Gridtracker Screen

Call Roster: 65 heard • 55 in roster • 0 wanted

RECEIVE **Halt Tx**

Logbook **Live Band & Mode**

Callsigns **All Traffic**

Hunting **New+Unconfirmed**

Wanted

☐ Callsign ☐ CQZ ☐ CQ Only ☒ Uses LoTW ☐ No **CQ RU**

☐ Grid ☐ ITUz ☐ Has Grid ☐ Not My DXCC

☐ DXCC ☐ State ☐ Min dB ☐ Only My DXCC

☐ QRZ ☐ County ☐ Max DT ☐ Uses eQSL

☐ WPX ☐ Cont ☐ Min freq ☐ Only New Calls

☐ OAMS ☐ Max freq

Exceptions

Fewer Controls

☐ Only **CQ FD**

☐ Regex

Callsign	Grid	Calling	DXCC	State	County	Cont	dB	Azim	PX	OAMS	Age
CU7AA	-	KP4DDY	Azores			EU	-2	0	CU7		18s
V31DL	EK57	CQ	Belize			NA	10	209	V31		18s
VA3MJR	-	W6R	Canada			NA	-17	0	VA3		18s
VE4YH	-	KN4USN	Canada			NA	7	0	VE4		17s
VE1RY	FN74	VE4YH	Canada			NA	5	46	VE1		3s
VE7FXP	DO00	KB1EFS	Canada			NA	-11	309	VE7		3s
VE7FKY	CN89	CQ	Canada			NA	-11	307	VE7		3s
EA8TN	IL18	CQ	Canary Is.			AF	-11	79	EA8		18s
TF2MSN	HP84	CQ	Iceland			EU	-2	31	TF2		3s
W4EJY	-	W4QYV	United States	TN	~ Decatur ~	NA	6	0	W4		18s
K9EYT	EN52	CQ	United States	IL	Cook	NA	5	312	K9		18s
KK3KK	DM14	W6R	United States	CA	San Bernardino	NA	0	278	KK3		18s
KF0CZD	-	KO4FYC	United States	SD	~ Lincoln ~	NA	4	0	KF0		18s
W8AW	EM26	W6R	United States	OK	Tulsa	NA	-5	277	W8		18s
NK1I	FN43	WA3WES	United States	ME	Cumberland	NA	15	35	NK1		18s
K5LD	EL98	CQ	United States	FL	Brevard	NA	1	195	K5		18s
KY0R	DM78	K1NSA	United States	CO	Pueblo	NA	3	285	KY0		18s
K6FEU	DM37	LU8RM	United States	UT	Washington	NA	-8	283	K6		18s
KF0AJ	EN31	AA7WI	United States	IA	Mahaska	NA	10	301	KF0		18s
WB6PIH	DM13	W6Q	United States	CA	Orange	NA	-9	276	WB6		18s
WW7B	DM33	W6R	United States	AZ	Maricopa	NA	-16	275	WW7		18s
NU1T	FN42	CQ	United States	NH	Hillsborough	NA	-16	39	NU1		18s
KN4WGE	EM66	CQ	United States	TN	~ Robertson ~	NA	-18	277	KN4		18s
K7SYS	DN18	HC5EG	United States	ID	~ Bonner ~	NA	-18	306	K7		18s
KF5TVG	EM26	W6R	United States	OK	Tulsa	NA	1	277	KF5		18s
K7HRT	-	KC4EZN	United States	WA	Spokane	NA	-9	0	K7		17s
KR0EHM	-	NK1I	United States	SD	~ Butte ~	NA	-3	0	KR0		17s
W4WN	-	W6Q	United States	NC	~ Chatham ~	NA	-6	0	W4		17s
WA4TTK	EM66	W6R	United States	TN	Davidson	NA	-12	277	WA4		17s
K9IHM	EM86	EA8TR	United States	TN	Jefferson	NA	-11	281	K9		17s
NB7B	DN31	K1NSA	United States	UT	Davis	NA	-6	292	NB7		17s
KJ6UMY	DM13	W6Q	United States	CA	~ Riverside ~	NA	-12	276	KJ6		17s
K7RBT	-	JH4MJO	United States	OR	Linn	NA	-9	0	K7		15s
WJ4T	EM67	W6Q	United States	KY	~ Butler ~	NA	-21	286	WJ4		15s
W9JA	EN43	CQ	United States	WI	La Crosse	NA	10	312	W9		3s
KC5WX	EM13	K9EYT	United States	TX	Grayson	NA	6	266	KC5		3s
W5JDF	EM03	EA8TN	United States	TX	~ Archer ~	NA	6	267	W5		3s
KD9QGE	EN40	K0HUU	United States	IL	~ Adams ~	NA	21	299	KD9		3s
W6R	-	KK3KK	United States			NA	4	0	W6		3s
KC6MIE	DM13	W6R	United States	CA	~ Riverside ~	NA	5	276	KC6		3s
K7KSH	DM65	CT3IQ	United States	NM	Sandoval	NA	15	277	K7		3s
KC1BUF	FN43	CQ	United States	NH	Merrimack	NA	-5	35	KC1		3s
W6RJM	CM87	CT3IQ	United States	CA	Contra Costa	NA	7	286	W6		3s

You're



Invited!

The Asheville Radio Museum First-Annual Radio Swap Meet

There will be lots of radios and parts for those looking to repair or build a new radio, plus museum tours!

When: October 23, 2021, from 8 a.m. – 3:00 p.m. Museum tours beginning at 10am

Where: Asheville-Buncombe Community Technical College, Asheville, NC

Fees: None

Museum Tours: Begin at 10 a.m.

For More Information and Directions: Go to avlradiomuseum.org or contact Ron Beaver (WB4OQL) at 864.304.8527 / ronaldbeaver1320@gmail.com

[Asheville Radio Museum | Asheville NC \(avlradiomuseum.org\)](http://Asheville Radio Museum | Asheville NC (avlradiomuseum.org))

Heathkit HP-23-A Rebuild, Steve Jenkins, W4MGT

My most recent project was restoring a Heathkit HP-23-A power supply and a Heathkit SB-600 speaker. The HP-23-A power supply generates four DC voltages: 820 volts, switchable 350 or 275 volts, -130 volts, and an adjustable -80 to -40 volts. It also generates two AC voltages: 6.3 volts and 12.6 volts. It is the most versatile power supply sold by Heathkit to power the multitude of tube type transceivers sold by Heathkit, and other types of amateur radio equipment.

The HP-23-A and SB-600 were covered in some sort of dirt, grime, and/or grease. The cleaning of the power supply, and the speaker cabinet, occurred after I had removed the old capacitors, resistors, and diodes. About three rounds of scrubbing with 409 cleaner were required to remove the grime. Some of the original paint on the speaker cabinet has chipped off over time. As a future project, I may repaint the SB-600 cabinet.

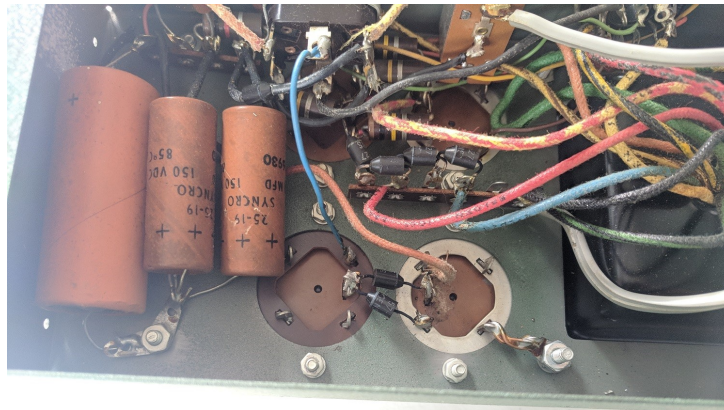
All the components were original and thus about 50 years old. At that age, electrolytic capacitors are on borrowed time, resistors can be way off their original values, and old diodes are just that, old tired diodes. Modern day electronic components, including discrete passive devices, are far superior compared to their 50 year old counterparts.

The design of, the manufacturing processes of, the materials used in, and the methods to test the components have improved over time. The most notable attributes of modern components compared to 50 year old components are 1) they are smaller and 2) the characteristics of the devices, and the tolerance of the characteristics, have improved.

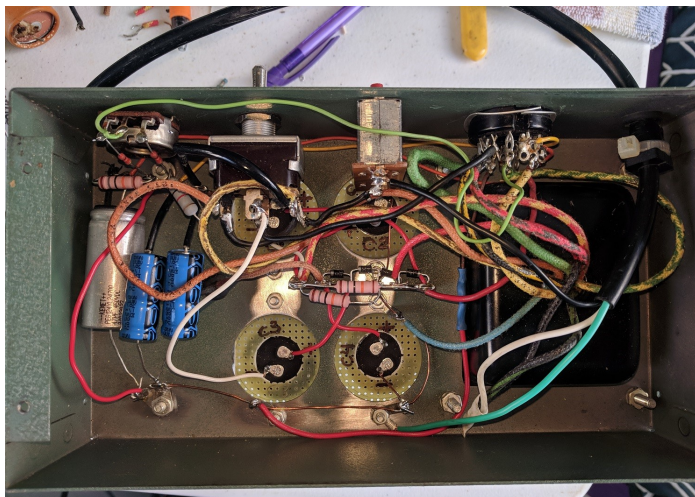
The HP-23-A power supply uses three different electrolytic capacitors. I replaced the four 125 uf, 450 V, 85 C, caps with 150 uf, 600 V, 105 C caps. I replaced the two 20 uf, 150 V, 85 C, caps with 22 uf, 200 V, 105 C, caps. And I replaced the 40 uf, 450 V, 85 C, cap with a 47 uf, 450 V, 85 C cap. All the replacement capacitors are significantly smaller. In fact, the original 40 uf capacitor had blown/leaked as seen in the pictures.

When I replaced the resistors, I increased the values of the "bleeder" resistors, and reduced the number of them, to simplify the design and reduce the idle heat generated by the power supply. "Bleeder" resistors serve two purposes in a DC power supply. First, when the power is turned off, the "bleeder" resistor discharges the final output capacitor stage to prevent a shock hazard. Second, for high voltage DC power supplies where the "output capacitor stage" is constructed using two, or more, capacitors in series, the "bleeder" resistors across each capacitor are the

Heathkit HP-23-A Rebuild, continued



HP23A inside Before



HP23A inside After

same resistance value to ensure the voltage across each capacitor is equal during operation. For example, the 820 volt DC supply uses two capacitors in series as the "output capacitor stage". When I rebuilt the supply, I used a 180k Ohm 1% tolerance, 3 watt resistor across each of the capacitors. The 1% tolerance was chosen to ensure the voltages across the two capacitors would always be within 2% of each other, worst case. This ensures one capacitor does not experience a significantly large voltage that could be greater than the capacitor's voltage rating. The value of the original "bleeder" resistors was 100k Ohm. By increasing the value, the power dissipated, and hence the heat radiated, is reduced. The power dissipated by the 180k Ohm resistors in this application is about 1 watt. Resistors in applications which continuously dissipate a fixed amount of power should be chosen to handle twice the amount of power. Therefore, I could have used 2

Heathkit HP-23-A Rebuild, continued



SB600 Front Before



SB600 Front After



Blown 40 uf Cap



New Old Component Comparison

watt, 180k Ohm, resistors, but 3-watt resistors are what I had on hand. And even at 3 watts, the new resistors were physically smaller than the original 100k Ohm 2 watt resistors.

The original Heathkit design of the 820 volt DC supply used two diodes in series, in two places of the circuit. The reason for this is because the original diodes could only handle 600 PIV (Peak Inverse Voltage), or 600 V when reversed biased. For the 820 V supply, the "diode" needs to tolerate 820 V when reversed biased. Two diodes in series, with theoretically the same manufacturing characteristics, would split the reverse bias voltage equally and thus each diode would experience 410 volts. Modern diodes that can handle the same amount of current are smaller and can tolerate 1000 V when reversed biased. Therefore, I was able to replace the 7 diodes in the HP-23-A with 5 modern diodes because I could reduce two series diodes to one modern diode in two places.

Heathkit HP-23-A Rebuild, continued



I also replaced the original 2-prong power plug with a 3-prong power plug. This increases the overall safety of the HP-23-A and the metal speaker cabinet that comes into contact with us humans. The third prong on a power plug is the "safety ground". It is traditionally the green wire of the three wires, and it is electrically connected to the metal chassis of the device, the HP-23-A directly, and when the supply is bolted into the SB-600 speaker, it is electrically connected to the SB-600 speaker cabinet. Also, when a 3-prong power plug is used, the plug is now polarized so the neutral side of the incoming 120 volt power is known and is traditionally the white wire of the three wires in the power plug. Keep in mind the neutral side of the incoming 120 volt power (white wire) is electrically connected to the safety ground back at the house power panel. For maximum safety, it is always best to put the power switch in the hot side of the incoming 120 volt power which is traditionally the black wire of the three wires in the power plug. Always check the connectivity of a 3-prong power cord before wiring it into a piece of equipment. Be sure to connect the safety ground to the metal chassis, and be sure to wire the power switch into the hot side of the incoming 120 volt power.

Like all good projects, I learned quite a bit as I worked through the specifics of the HP-23-A rebuild. If I rebuilt another Heathkit HP-23 series supply, there are a couple of things I might do differently. I'd be glad to discuss even more details with anyone taking on a Heathkit HP-23 power supply rebuild project.

73, Steve Jenkins, W4MGT
jenx4321@gmail.com